

## Apsilocephalidae, A New Family of the Orthorrhaphous Brachycera (Insecta, Diptera)

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**ABSTRACT**—*Apsilocephala* (from California, New Mexico and Mexico) and *Clesthentia* (from Tasmania) have until now been erroneously placed in the family Therevidae. These two genera and a new genus *Clesthentiella* (from Tasmania) together form a taxon which is independent of all the other extant families of the orthorrhaphous Brachycera, and the Apsilocephalidae is here erected as a new family to receive them. This family may be closely related to, or even identical with, the Jurassic Rhagionempididae. Among the extant families, the Apsilocephalidae are phylogenetically closest to the Empidoidea but may be readily separated from the latter by a series of characters.

### INTRODUCTION

This paper is the first in a series of three in which two enigmatic "Therevid" genera are discussed. One of these, *Clesthentia*, was originally described into the family Leptidae (=Rhagionidae) by White [1], but was subsequently transferred to the Therevidae by Hardy [2]. The other, *Apsilocephala*, was originally placed in the family Therevidae by Kröber [3], but this assignment was questioned by Irwin [4] and by Irwin and Lyneborg [5, 6]. Our own study has led us to the conclusion that *Apsilocephala* (from California, New Mexico and Mexico), *Clesthentia* (from Tasmania) and *Clesthentiella* gen. n. (from Tasmania) belong to a new family, which is here formally named and described as the Apsilocephalidae. It is possible that the Apsilocephalidae are closely related to, or even identical with, the Rhagionempididae, a group known only from Middle Jurassic fossils from Karatau in the USSR.

The genitalia of the Apsilocephalidae, and the systematic position of the Apsilocephalidae and

associated taxa (Rhagionempididae, Protempididae, Vermileonidae, Hilarimorphidae, and some genera of Bombyliidae) will be discussed in the next two papers of this series.

### MATERIALS

The specimens studied are deposited in the following institutions: ZMC (=Zoological Museum, Copenhagen, Denmark) and KAU (=Kagoshima University, Kagoshima, Japan).

### Apsilocephalidae fam. n.

Type-genus: *Apsilocephala* Kröber, 1914 [3].

**Diagnosis.** The Apsilocephalidae can be characterised as follows: Frons and face much longer than wide, and the latter deeply concave; occiput swollen and its middle section not concave; antennal segment 3 rounded-triangular, the apical portion flattened laterally, and with an apical style tapering acutely apically and pointed at apex; antennal style unsegmented or with two segments, the basal one small and inconspicuous; mesoscutum strongly arched; prosternum and metapleuron bare; mesoscutum and scutellum with setae; five or

four posterior cells present (vein  $M_3$  often absent); vein  $R_5$  ending at or before wing apex; 4th posterior cell (when present) and anal cell closed and petiolate; apex of tibia with a circlet of setae and without any spur; empodium bristle-like.

The family Apsilocephalidae is erected for the three genera *Apsilocephala*, *Clesthentia* and *Clesthentiella*. The following description of the Apsilocephalidae is based mostly upon *Apsilocephala longistyla* and *Clesthentia* sp. Some anomalies presented by *Clesthentiella crassioccipitis* are discussed after the description.

**Description.** Head (Figs. 2–4, 10–11, 13, 20–26, 30): Eyes widely separated in both sexes, but frons much narrower than an eye when viewed directly from in front; male eye not divided into two portions by the size of the facets (as in female eye); occiput swollen and its middle section not concave; occiput developed behind eye in lateral view; frons much longer than wide, slightly narrower towards antennae, but slightly expanded just above antennae; face much longer than wide, parallel-sided or somewhat wider towards proboscis, and concave (except just below antennae); antennal segment 3 rounded-triangular or pyriform, with a terminal style which is two-segmented (basal segment small and inconspicuous) in *Apsilocephala longistyla* and *Clesthentia* sp. but one-segmented in *Clesthentiella crassioccipitis*; proboscis fleshy and not longer than face; theca much shorter than labellum; palpus two-segmented, and basal segment longer than the apical segment which is clubshaped; lacinia needle-like and much shorter than palpus; occiput near uppermost corner of each eye with longer and stouter hairs.

**Thorax** (Figs. 1, 12, 18): Mesoscutum strongly arched; mesoscutum, scutellum, propleura, and upper part of mesopleura with hairs, these shorter on the last-named area; rest of thorax, including prosternum and metapleura (=pleurotergite), bare; mesoscutum and scutellum with pairs of setae or bristles as follows: *np* 2–3, *sa* 1–2, *pa* 0–1, *dc* 0–6, *sc* 2.

**Wing** (Figs. 5, 14–15, 27–28): Five posterior cells present; 4th posterior cell and anal cell closed and petiolate; vein  $R_5$  ending before or at wing apex; alula and squama not large; haltere with knob elongate and longer than stem.

**Legs** (Figs. 6–7, 16–17, 29): Fore and mid coxae with hairs on anterior surface; hind coxae with hairs on antero-apical part and on outer posterior surface (except base); each tibia with sparse setae, and its apex with a circlet of setae; two pulvilli present; empodium bristle-like.

**Abdomen** (Figs. 1, 8–9, 12, 19): Elongate; narrower posteriorly beyond segment 3.

The following anomalies should be noted. In *Clesthentiella crassioccipitis* (♀) from Tasmania, vein  $M_3$  is absent (Fig. 27), the knob of haltere is spherical (Fig. 28), the antennal style is one-segmented and short (Fig. 30). The presence or absence of *sa* and *sc* bristles remains uncertain due to its poor condition.

**Discussion.** The following characters of the Apsilocephalidae appear to be apomorphies: (1) antennal segment 3 round-triangular or pyriform, with the terminal style 1–2 segmented, tapering apically and pointed; (2) male genitalia with a large and more complex surstylus at each posterolateral corner of tergum 9, although the genitalia show plesiomorphic features among gonocoxite, gonostylus and sternum 9 (see the next paper in this series). This combination of apomorphic and plesiomorphic characters is unique for the Apsilocephalidae. Character (1) is also found in the Vermileonidae, Empidoidea, and some primitive families of the Cyclorrhapha, and will be discussed in another paper in this series.

The Apsilocephalidae appear to be close to the Jurassic Rhagionempididae and may even be identical with this group. In the Apsilocephalidae, the antennal style is two-segmented, although the basal segment is small and inconspicuous (in *Apsilocephala longistyla* and *Clesthentia* sp.), or one-segmented (in *Clesthentiella crassioccipitis*); the occiput is swollen and its middle (or upper inner) section is not concave; the 4th posterior cell (when present) and anal cell are petiolate. In the Rhagionempididae, on the other hand, the antennal style is apparently one-segmented; the occiput is more or less flattened posteriorly; the 4th posterior cell (when present) is open; and the anal cell is open or closed at the wing-margin. Unfortunately, the most important characteristics of the Rhagionempididae are not known: Presence or absence of pulvilliform empodium, and structure of

the male and female genitalia.

In the Therevidae and Apsilocephalidae, five or four posterior cells are present; the vertex is not concave below level of eye; antennal segment 3 has a terminal style; the proboscis is fleshy; mesoscutum and scutellum have setae; the tibia has a circlet of setae at apex. Apart from the male genitalia, which are very different in these two families, the Apsilocephalidae may be easily separated from the Therevidae by having vein  $R_5$  ending at or before the wing apex (in the Therevidae, it ends far behind wing apex).

The Apsilocephalidae can also be immediately distinguished from the Scenopinidae, in which only three posterior cells are present, vein  $M_1$  ends in vein  $R_5$  or the wing margin at or before wing apex, the antennal style is minute and usually situated before the apex of segment 3, mesoscutum and scutellum have no setae, and the apex of tibia has no circlet of setae.

It is also clear that the Apsilocephalidae cannot be assigned to any other family of the Asiloidea s. lat. (Nemestrinidae, Acroceridae, Hilarimorphidae, Mydidae, Apioceridae, and Asilidae including Leptogastrinae), each of which is clearly defined.

The relationship between the Apsilocephalidae and the two large taxa Bombyliidae and Empidoidea (including Dolichopodidae) will be discussed in the next paper of this series. However, it should be noted here that the Apsilocephalidae are phylogenetically closest to the Empidoidea but can be easily distinguished from them by the presence of vein  $M_4$  and by the obvious differences among gonocoxite, gonostylus and sternum 9.

#### Key to genera of Apsilocephalidae

1. Antennal style shorter than antennal segment 3 (Figs. 20–21, 24, 30); vein  $R_5$  ending before wing apex (Fig. 14); body and legs more robust than in *Apsilocephala* (Figs. 12, 16, 19, 29) ..... 2
- Antennal style much longer than antennal segment 3 (Fig. 10); vein  $R_5$  ending at wing apex (Fig. 5); body and legs more slender than in *Clesthentia* and *Clesthentiella* (Figs. 1, 6, 8–9) ..... *Apsilocephala*

(California, New Mexico, and Mexico)

2. Antennal style two-segmented (Figs. 20, 24); vein  $M_3$  complete (Fig. 14) ..... *Clesthentia* (Tasmania)
- Antennal style one-segmented (Fig. 30); vein  $M_3$  lacking (Fig. 27) ..... *Clesthentiella* (Tasmania)

#### *Apsilocephala* Kröber

*Apsilocephala* Kröber, 1914 [3]: 36. Type-species: *Apsilocephala longistyla* Kröber, 1914, from North America.

*Apsilocephala* may be distinguished from *Clesthentia* and *Clesthentiella* by the following features: Body and legs more slender than in *Clesthentia* and *Clesthentiella*; antennal style much longer than antennal segment 3; vein  $R_5$  ending at wing apex.

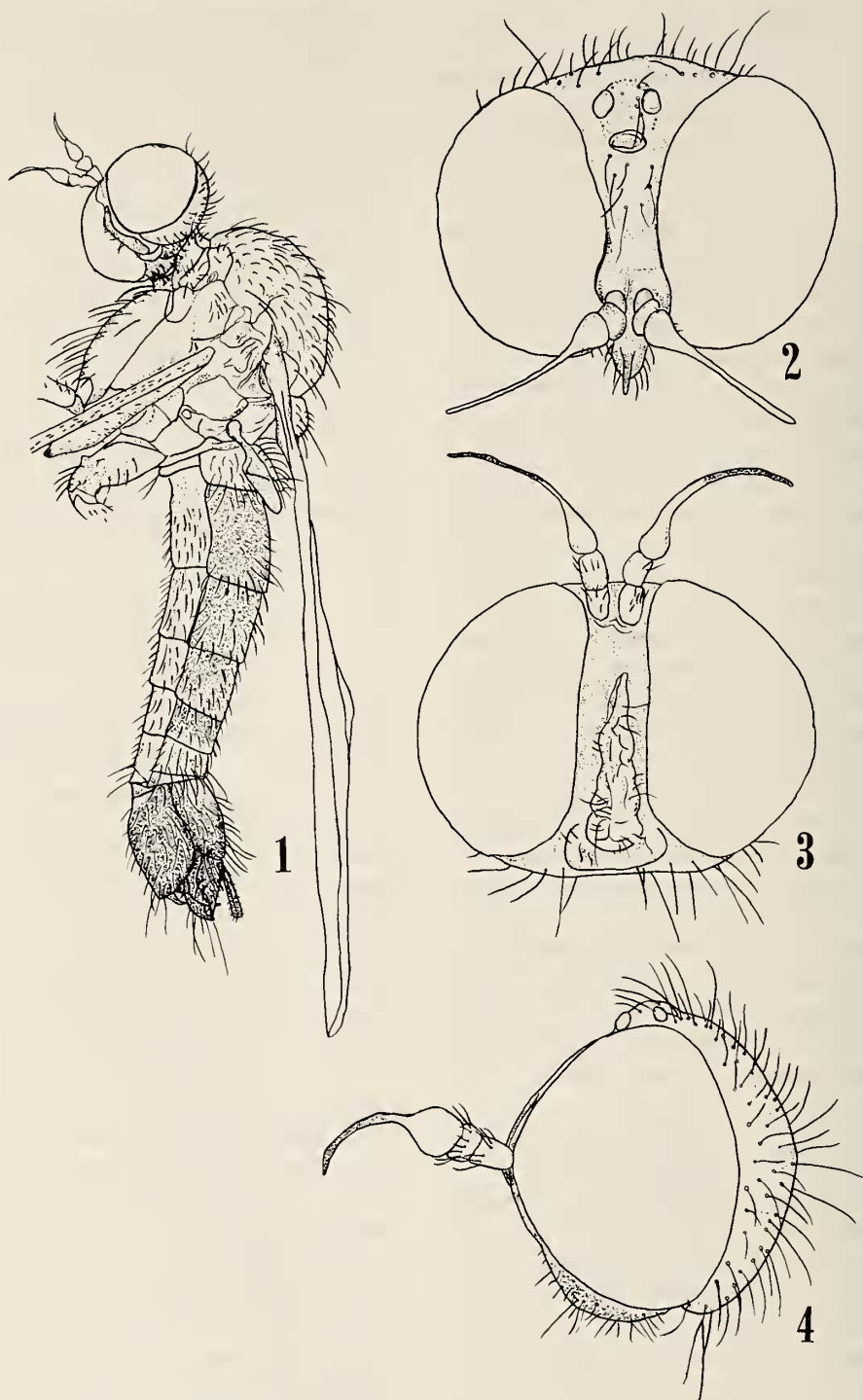
#### *Apsilocephala longistyla* Kröber (Figs. 1–11)

*Apsilocephala longistyla* Kröber, 1914 [3]: 36. Type-localities: New Mexico ("Pecos") & Mexico (Ensenada).

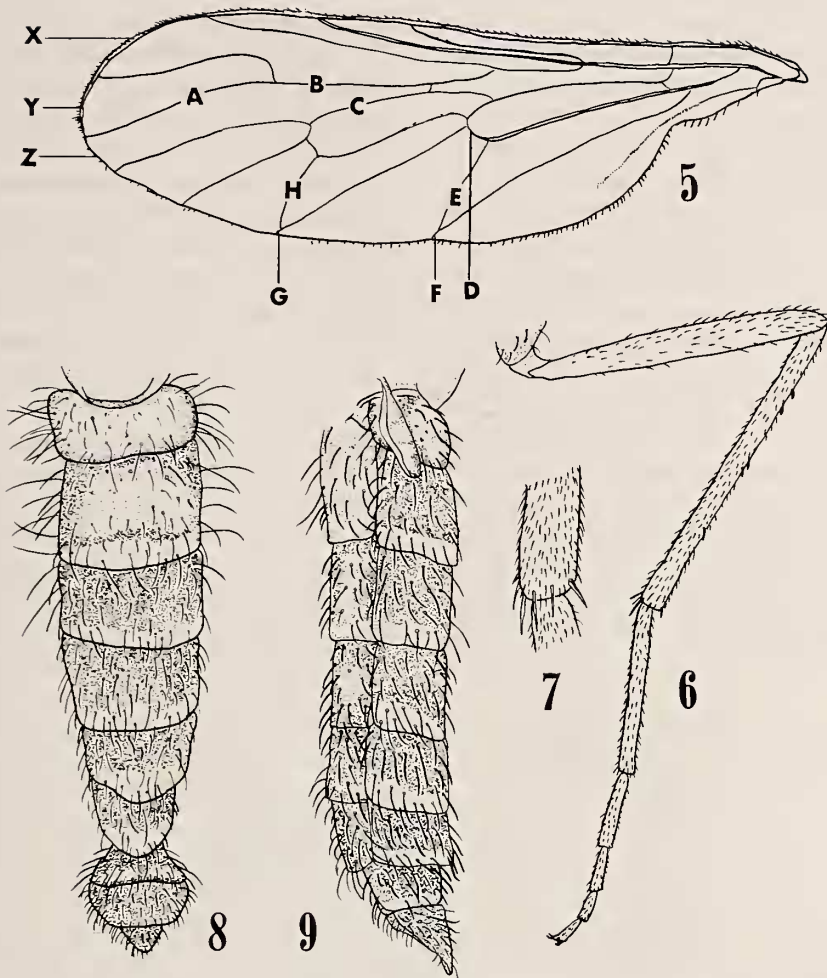
The following description is based upon 4 ♂, 4 ♀ from California which agree well with the original description of *longistyla* [based on 3 ♂ from "Pecos" (New Mexico) and 1 ♀ from Ensenada (Mexico)].

Male. Head (Figs. 2–4, 10–11): Dark brown to black, but antenna, palpus and proboscis yellowish-brown; antennal style darker than rest of antenna; head except eye and appendages densely greyish-white pollinose; frons (except above antennae), ocellar triangle, vertex, occiput, and cheek with pale pile which is recumbent on the former two and longer on occiput near uppermost corner of eye; proboscis shorter pale pilose and antennal segments 1–2 with short black hairs; greatest width of an eye in direct frontal view 1.1–1.2 times distance from antenna to anterior ocellus, 2.1–2.6 times width of face at lowest portion in direct frontal view, and 1.8–2.3 times width of frons just above antenna; width of frons at anterior ocellus 1.1–1.3 times that just above antenna, 1.3–1.5 times that at narrowest point, and 1.1–1.7 times width of ocellar triangle; ocellar triangle





FIGS. 1-4. *Apsilocephala longistyla*, male. 1, Lateral view; 2, head, direct frontal view (=distance between antenna and anterior ocellus is kept horizontal); 3, head, facial view; 4, head, lateral view. Note that in Figs. 2-4 the basal segment of antennal style is not shown, because it is hardly visible in a specimen not macerated in KOH solution.



FIGS. 5-9. *Apsilocephala longistyla*. 5, Male wing; 6, male hind leg, anterior view; 7, apex of tibia and base of basitarsus in male hind leg, anterior view; 8-9, female abdomen, dorsal and lateral views. A, vein  $R_5$ ; B, vein between 1st submarginal cell and 1st posterior cell; C, vein between 1st posterior cell and discal cell; D, vein between 2nd basal cell and 5th posterior cell; E, vein between anal cell and 5th posterior cell; F, petiole of anal cell; G, petiole of 4th posterior cell; H, vein between 4th posterior cell and 3rd posterior cell; X, mouth of 1st submarginal cell; Y, mouth of 2nd submarginal cell; Z, mouth of 1st posterior cell.

1.0-1.2 times as wide as long; space between antennae 0.1-0.2 times width of ocellar triangle; distance from antenna to ventral base of palpus 1.5-1.6 times that from antenna to anterior ocellus, which is 2.1-2.2 times length of ocellar triangle; antenna (including style) 2.0 times as long as distance from antenna to anterior ocellus ( $N=1$ ); relative lengths of antennal segments 1-3 (along mid-outer surface) 170 (160-200):100:210 (200-220), and their relative widths in lateral view 130 (120-140):170 (160-200):160 (160); antennal

style 1.2 times as long as antennal segments 1-3 ( $N=1$ ); antennal style with two segments, the basal one short and inconspicuous; data based on 4 specimens.

Thorax (Fig. 1): Yellowish-brown; mesoscutum (except anterior border, but including humeral calli) and scutellum covered with pale pile; propleura longer pale pilose and upper part of mesopleura shorter pale pilose; the number of pale bristles as follows: notopleural 2-3, supra-alars 1-2, postalar 1, dorsocentrals 5-6, marginal scutellar

2 (pairs).

Wing (Fig. 5): Membrane faintly brown fumose and greyish, without darker stigma; veins yellowish-brown to brown; haltere yellowish-brown; A 1.3–1.4 times as long as B, which is 1.1–1.3 times as long as C; E 0.7–0.9 times as long as C and 3.4–4.5 times as long as D; F 0.3 times as long as D; Y 0.4 times as long as X and 1.1–1.2 times as long as Z; G 0.1–0.2 times as long as H; in axillary, major axis 3.9–4.1 times as long as minor axis; (N=3).

Legs (Figs. 6–7): Yellowish-brown, but tarsi (except bases of tarsomere 1) somewhat darker; coxae with longer erect pale pile and femora with short recumbent pile; relative lengths of segments (excluding coxa and trochanter) of fore leg 136 (131–147):171 (161–183):100:41 (39–44):30 (29–31):20 (19–20):19 (19–20); of mid leg 150 (145–160):197 (191–207):115 (113–120):45 (42–47):31 (29–33):20 (19–22):18 (16–19); of hind leg 208 (200–220):258 (244–273):120 (116–127):

56 (53–60):34 (31–37):23 (22–23):20 (19–23); and hind leg, viewed from the side, with relative widths of femur, tibia, and tarsomeres 1–3, 27 (25–28):17 (16–17):13 (13):10 (9–10):9 (8–10); (N=4).

Abdomen (Fig. 1): Yellowish-brown; in better preserved specimens, segments 2–7 darker except on posterior parts; with pale pile above and below which is longer on sides of terga 1–3.

Length: Body 4.3–4.5 mm (N=2); wing 4.0–4.6 mm (N=4); fore basitarsus 0.8–0.9 mm (N=4).

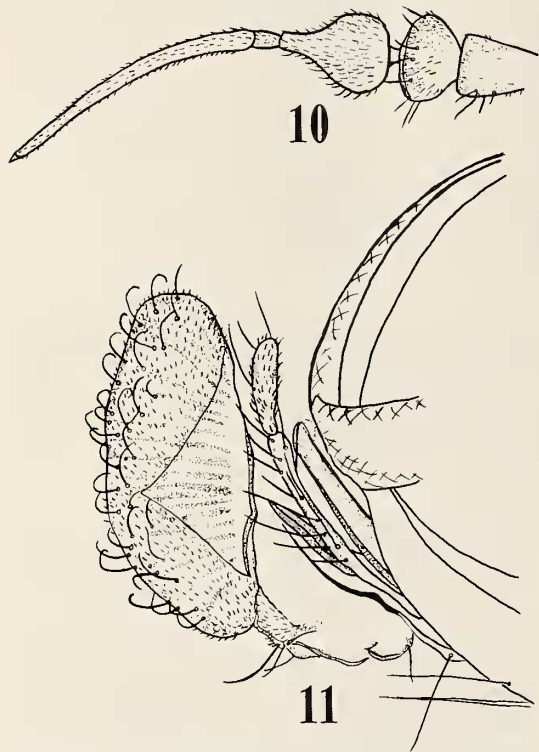
Female. There is probably no significant difference between the sexes.

Head: In direct frontal view, greatest width of an eye 1.3 times distance from antenna to anterior ocellus (N=2), 1.8 times width of face at lowest portion in direct frontal view (N=1), and 1.9–2.1 times width of frons just above antenna (N=2); width of frons at anterior ocellus 1.2 times that just above antenna (N=3), 1.2–1.4 times that at narrowest point (N=3), and 1.4–1.5 times width of ocellar triangle (N=3); distance from antenna to ventral base of palpus 1.6–1.7 times that from antenna to anterior ocellus (N=3); relative lengths of antennal segments 1–3, 165 (160–167):100:235 (233–240), and their relative widths in lateral view 118 (117–120):142 (133–160):171 (167–180) (N=3); antennal style 1.1 times as long as antennal segments 1–3 (N=1).

Wing: A 1.2–1.5 times as long as B, which is 1.2–1.3 times as long as C; E 0.8–0.9 times as long as C and 3.6–5.4 times as long as D; F 0.1–0.4 times as long as D; Y 0.4 times as long as X and 1.0–1.2 times as long as Z; G 0.1–0.3 times as long as H; in axillary, major axis 3.6–4.0 times as long as minor axis; (N=3).

Legs: Relative lengths of segments of fore leg 137 (131–147):175 (166–185):100:40 (38–41):29 (26–31):20 (18–21):20 (18–21); of mid leg 155 (150–165):203 (197–209):117 (114–121):46 (45–47):31 (31–32):21 (20–21):19 (17–21); of hind leg 211 (205–224):268 (255–285):120 (114–129):58 (57–59):35 (34–38):23 (22–24):21 (20–22); and on hind leg, viewed from the side, relative widths of femur, tibia, and tarsomeres 1–3, 28 (24–32):17 (16–18):14 (12–15):11 (10–12):9 (9); (N=4).

Abdomen (Figs. 8–9): Segment 1 and posterior



FIGS. 10–11. *Apsilocephala longistyla*, male (macerated in KOH solution). 10, Antenna (excluding base of segment 1), outer view; 11, mouthparts and part of head, lateral view.

borders of segments 2–7 rather distinctly paler than the rest of abdomen (this may be so in ♂).

Length: Body 5.3–5.6 mm (N=3); wing 3.9–5.0 mm (N=4); fore basitarsus 0.7–1.0 mm (N=4).

Distribution. North and Central America (California, New Mexico, and Mexico).

Material examined. CALIFORNIA: 3 ♂, 1 ♀, Riverside, 2 & 30. vi. 1969 (Hall) (2 ♂, ZMC; 1 ♂, 1 ♀, KAU); 3 ♀, Riverside, 18. v. 1970, 8. vi. 1970 & 30. v. 1976 (Hall) (ZMC); 1 ♂, P. L. Boyd Des. Res. Cent. Deep Cyn. 4 mi. s. Palm. Desert, Riv. Co., 18. v. 1969 (Irwin) (ZMC).

### *Clesthentia* White

*Clesthentia* White, 1914 [1]: 45. Type-species: *Clesthentia aberrans* White, 1914, from Tasmania.

*Clesthentia* may be separated from *Apsilocephala* by the following features: Body and legs more robust than in *Apsilocephala*; antennal style shorter than antennal segment 3; vein  $R_5$  ending before

wing apex. *Clesthentia* may also be distinguished from *Clesthentiella* by having the antennal style two-segmented and vein  $M_3$  complete.

### *Clesthentia aberrans* White

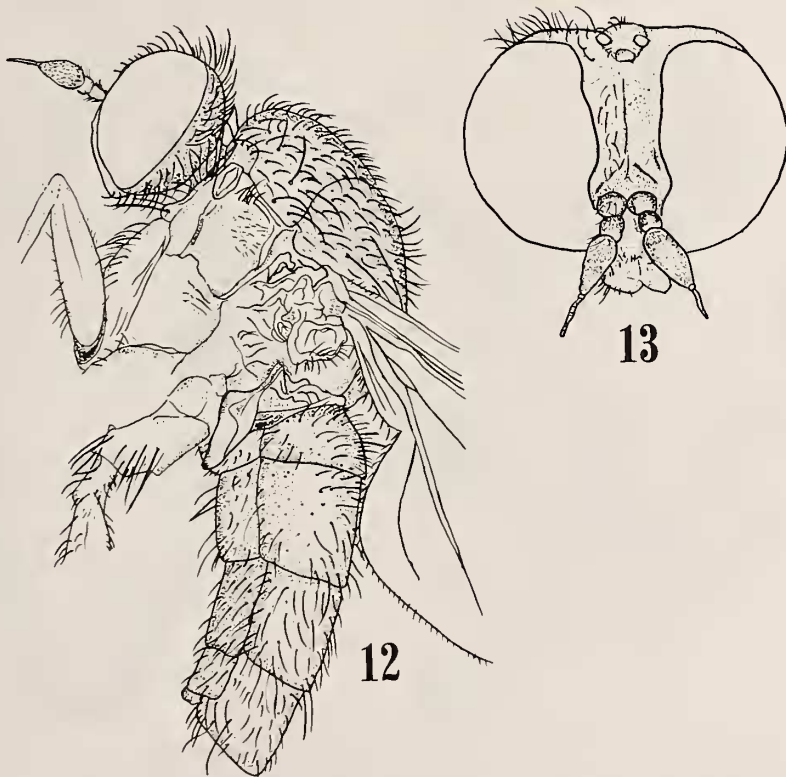
*Clesthentia aberrans* White, 1914 [1]: 46. Type-locality: Tasmania (Mangalore).

"Length. Male, 4.5 mm; Female 5 mm.

Female resembles the male in all respects.

This species occurs commonly on the windows of my house at Mangalore, between September 20 and December 15. I have not met with it elsewhere." (White [1]).

The specimens described in this paper as *Clesthentia* sp. may be identical with *aberrans*. However, there are several discrepancies in the original description of *aberrans*, for example: "thorax greatly arched; antennae with the first and second joints extremely small, the third about three times as broad as the second, and three times as long as



FIGS. 12–13. *Clesthentia* sp., female. 12, Lateral view (posterior part of abdomen has been removed); 13, head, in direct frontal view.



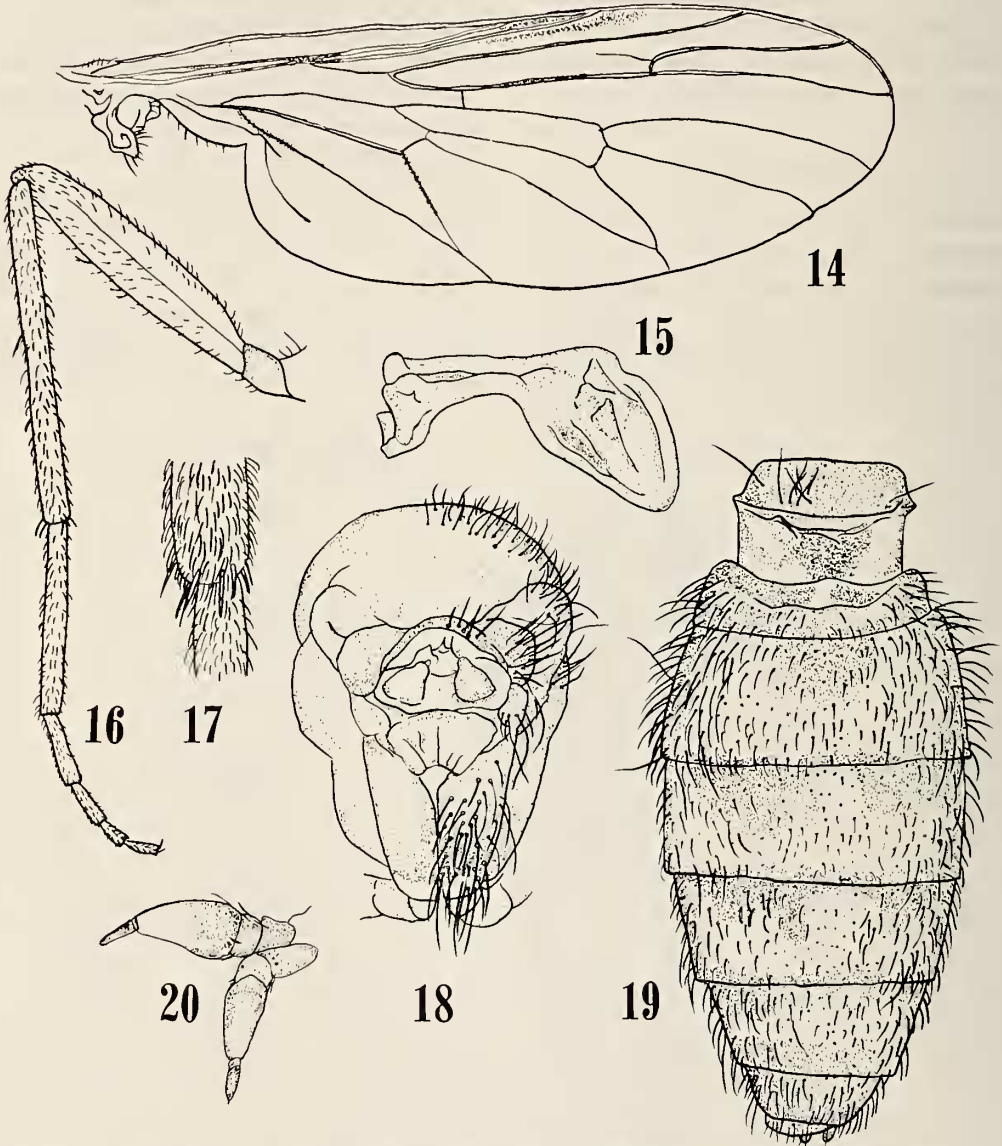
the first and second together, .....; the fourth posterior and anal cell closed *slightly above* the wing margin."

Distribution. Tasmania.

*Clesthertia* sp.  
(Figs. 12–24)

The specimens described below may belong to *aberrans*, but they differ from the original description in the following respects: thorax not so greatly arched; antennal segments 1–2 never minute in size; and 4th posterior and anal cells closed far before wing margin. Perhaps they represent a distinct species.

Male. Head (Fig. 20): Dark brown to black;

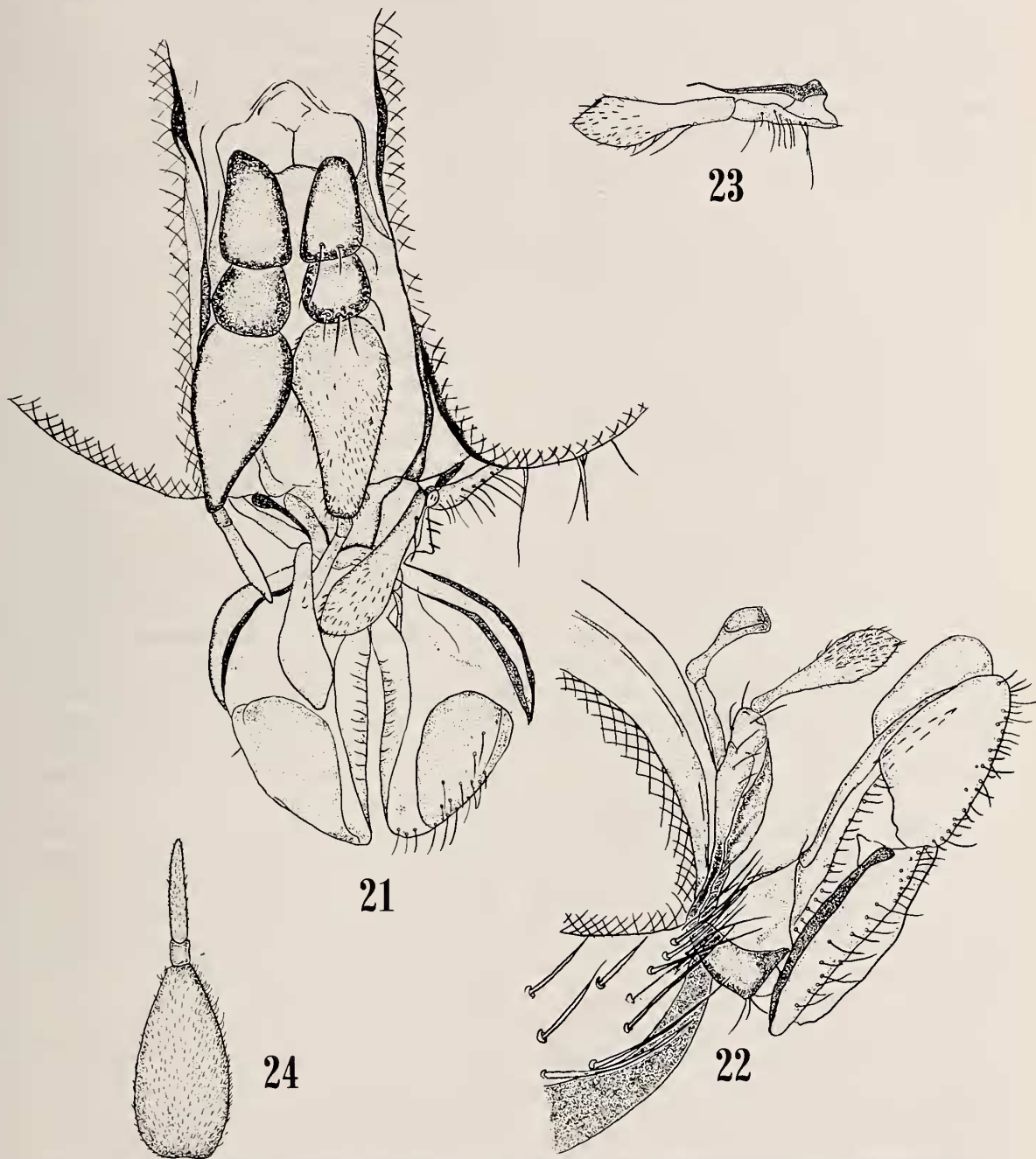


FIGS. 14–20. *Clesthertia* sp. 14, Female wing; 15, female haltere, posterior view; 16, female hind leg, *posterior* view; 17, apex of tibia and base of basitarsus of female hind leg, *posterior* view; 18, female mesoscutum, prothorax, fore coxae, etc., *anterior* view; 19, female scutellum, postsutellum and abdomen, dorsal view (based on 2nd specimen); 20, male antennae (right antennal segment 3 and style are kept horizontal).



proboscis yellowish-brown to brown; head with pale grey pollen which may be dense just above antennae; frons, occiput and cheek more or less

shining; antennal segments 1-2, dorso-proximal part of segment 3, frons (except just above antennae), and ocellar triangle with black hairs which



FIGS. 21-24. *Clesthentia* sp., female (macerated in KOH solution). 21-22, Mouthparts and part of head, dorsal and lateral views; 23, palpus and lacinia (not straightened out), antero-dorsal view; 24, antennal segment 3 and style, outer view.

are short on the former two; occiput and cheek with thick pale pile; proboscis with short pale pile; in direct frontal view, greatest width of an eye 1.1 times distance from antenna to anterior ocellus, 2.5 times width of face at lowest portion in direct frontal view, and 1.9 times width of frons just above antenna; width of frons at anterior ocellus equal to that just above antenna, 1.3 times that at narrowest point, and 1.2 times width of ocellar triangle; ocellar triangle 1.3 times as wide as long; space between antennae 0.15 times width of ocellar triangle; distance from antenna to ventral base of palpus 1.4 times that from antenna to anterior ocellus, which is 2.8 times length of ocellar triangle; antenna (including style) 1.4 times as long as distance from antenna to anterior ocellus; relative lengths of antennal segments 1, 2, 3 and style (along mid-outer surface) 160:100:360:160, and their relative widths in lateral view 120:160:200:40; antennal style two-segmented, 0.3 times as long as antennal segments 1–3, and basal segment short and inconspicuous.

Thorax: Dark brown to black, and pale grey pollinose; humeral and posterior calli pale brown to brown; mesoscutum and scutellum with pale pile (partly shorter and recumbent and partly longer and erect), some of which become much longer in posterior part; lateral border of mesoscutum with pale bristles, 3 before suture and 1 above base of wing; pro- and upper part of mesopleura with pale pile which is longer on the former and shorter on the latter; rest of pleura bare.

Wing: Membrane brown fumose; apical portion of subcostal cell and area just behind it (=stigma in marginal cell) darker; veins brown to dark brown; haltere yellowish-brown; A 0.9 times as long as B, which is 1.4 times as long as C; E 0.8 times as long as C and 4.0 times as long as D; F 1.4 times as long as D; Y 0.5 times as long as X and 0.9 times as long as Z; G 0.5 times as long as H; in axillary, major axis 3.1 times as long as minor axis.

Legs [hind tarsomeres 2–5 missing]: Yellowish-brown, but coxae and apices of tarsi darkened; femora may be somewhat darker; coxae with longer erect pale pile; femora with shorter, recumbent, mainly pale pile; relative lengths of segments (excluding coxa and trochanter) of fore leg 154:163:100:38:29:17:21; of mid leg 154:175:117:46:

29:17:21; of hind leg 208:254:?:?:?:?:?; and on hind leg in lateral view, relative widths of femur and tibia 46:21.

Abdomen [segments 5–8 removed for dissection]: Dark brown to black; dorsum with black, mostly shorter, recumbent hairs, except for sides which have pale longer pile; venter with pale pile.

Length: Body ? mm; wing 3.3 mm; fore basitarsus 0.6 mm.

Female. There is probably no significant difference between the sexes in most of the characters mentioned below. Head (Figs. 12–13, 21–24): Vertex, occiput behind upper eye margin and frons opposite anterior ocellus with longer black hairs (this may be so in ♂); in direct frontal view, greatest width of an eye 1.7–1.8 times width of face at lowest portion in direct frontal view (in ♂ 2.5 times); width of frons at anterior ocellus 1.4–1.5 times width of ocellar triangle (in ♂ 1.2 times); relative lengths of antennal segments 1, 2, 3 and style 184 (167–200):100:367 (367):200 (200), and their relative widths in lateral view 133 (133):150 (150):200 (200):33 (33) (in ♂ style 1.6 times as long as antennal segment 2). In 2 specimens measured, greatest width of an eye equal to distance from antenna to anterior ocellus and 1.6–1.7 times width of frons just above antenna; width of frons at anterior ocellus 1.2 times that at narrowest point; space between antennae 0.2–0.25 times width of ocellar triangle; distance from antenna to ventral base of palpus 1.1–1.3 times that from antenna to anterior ocellus, which is 2.9–3.0 times length of ocellar triangle.

Wing (Figs. 14–15): A 1.1 times (N=1) as long as B, which is 1.2–1.4 times as long as C; E 0.8 times as long as C and 3.8–3.9 times as long as D; F 1.0–1.1 times as long as D; Y 0.6 times (N=1) as long as X and 1.1 times (N=1) as long as Z; G 0.18 times as long as H; in axillary, major axis 2.8–2.9 times as long as minor axis; (N=2).

Legs (Figs. 16–17): Relative lengths of segments of fore leg 160 (156–163):165 (163–166):100:38 (38):28 (28):19 (19):21 (20–22); of mid leg 164 (159–169):180 (175–184):118 (116–119):43 (41–44):30 (28–31):19 (19):22 (22); of hind leg 215 (213–216):271 (269–272):132 (125–138):50 (50):35 (31–38):21 (19–22):22 (22); and on hind leg in lateral view, relative widths of femur, tibia, and

tarsomeres 1-3, 43 (38-47):24 (22-25):16 (16):12 (11-13):10 (9-11); (N=2).

Abdomen [which is complete] (Figs. 12, 19): As in description of male [in which segments 5-8 have been removed for dissection].

Length: Body 4.6 mm (N=1); wing 4.6 mm (N=1; in this specimen, apical part of abdomen has been removed); fore basitarsus 0.8 mm (N=2).

Distribution. Tasmania.

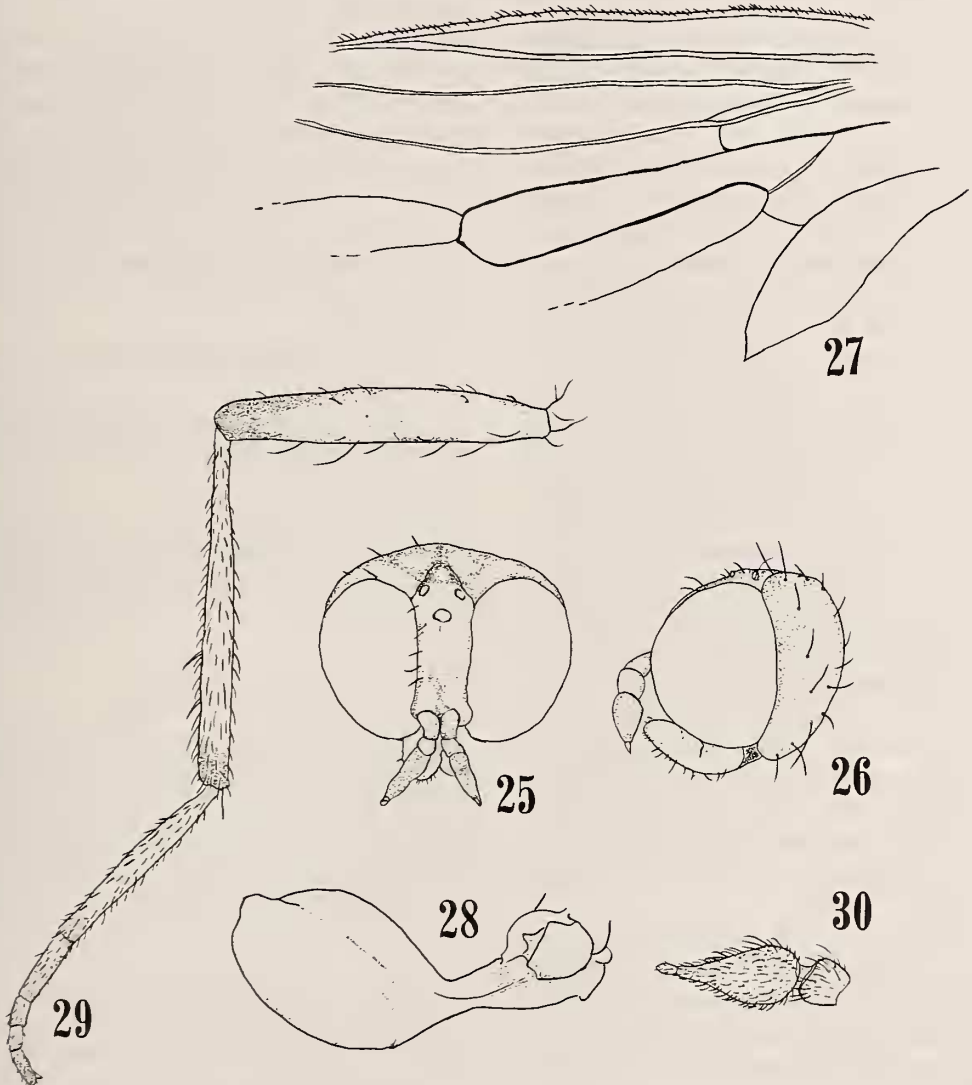
Material examined. TASMANIA: 2 ♀, Hobart,

26. xii. 1947 (*Riek*) (ZMC; KAU); 1 ♂, Mt. Wellington (*Hardy*) (ZMC) (this specimen is labelled as *C. aberrans* White by G. H. Hardy).

*Clesthentiella* gen. n.

Type-species: *Clesthentiella crassioccipitis* Nagatomi, Saigusa, H. Nagatomi et Lyneborg, from Tasmania.

This genus may be distinguished from *Clesthentia* by the following features: antennal style one-



FIGS. 25-30. *Clesthentiella crassioccipitis*, female (antenna in Fig. 30 is macerated in KOH solution). 25, Head, in direct frontal view; 26, head, lateral view; 27, part of wing; 28, haltere, anterior view; 29, hind leg, anterior view; 30, antennal segments 2, 3 and style, outer view.



segmented; vein  $M_3$  absent.

*Clethrentiella crassioccipitis* sp. n.  
(Figs. 25–30)

This species is here named as new to science based on a single female specimen. *Clethrentiella crassioccipitis* can be easily distinguished from our *Clethrentia* sp. (which may possibly be *aberrans*) by the following features: (1) occiput conspicuously developed behind eye; (2) labellum, legs, and haltere knob white; (3) haltere knob spherical in shape; (4) vein  $M_3$  entirely absent; (5) antennal style one-segmented and short. Character (2) may possibly be abnormal or may vary within species.

Female. Head (Figs. 25–26, 30): Brown to dark brown; labellum white; frons and occiput polished; area above antenna greyish-white pollinose; frons except lower part, ocellar triangle, vertex, occiput and proboscis with pale pile; antennal segments 1–2 may have short black hairs; in direct frontal view, greatest width of an eye 1.1 times distance from antenna to anterior ocellus, *c.* 2.0 times width of face at lowest portion in direct frontal view, and 1.8 times width of frons just above antenna; width of frons at anterior ocellus 1.1 times that just above antenna, 1.2 times that at narrowest point, and 1.1 times width of ocellar triangle; ocellar triangle 1.3 times as wide as long; space between antennae *c.* 0.05 times width of ocellar triangle; distance from antenna to ventral base of palpus 1.4 times that from antenna to anterior ocellus, which is 2.0 times length of ocellar triangle; antenna (*minus style*) 1.1 times as long as distance from antenna to anterior ocellus; relative lengths of antennal segments 1, 2, 3 (measured along mid-outer surface) 100:100:250, and their relative widths in lateral view 100:150:175, antennal style one-segmented and short (*c.* 0.1 times as long as antennal segments 1–3).

Thorax: Brown to dark brown, polished; prosternum white; pleura (except lower part of sternopleura) and lateral border (including humeral calli) of mesoscutum greyish-white pollinose; mesoscutum and scutellum with pale pile which may be longer and stouter on the latter and on posterior part of the former; propleura and upper part of mesopleura with pale pile which is short and

inconspicuous on the latter; mesoscutum with 2 pale bristles before suture.

Wing [crumpled in the only specimen available] (Figs. 27–28): Membrane pale brown to whitish; apical portion of subcostal cell and area just behind it (=stigma in marginal cell) may be brown; veins brown; vein  $M_3$  entirely absent; vein  $M_4$  complete, arising from 2nd basal cell, and its base separated from discal cell; [in anal cell, length of petiole not determinable in our specimen]; A 0.6 times as long as B; haltere with stem brown and knob spherical and white.

Legs (Fig. 29): White; femora, mid and hind coxae may be partly brown; apices of tarsi and apex of hind tibia may be brown; coxae and femora with white pile; relative lengths of segments (excluding coxa and trochanter) of fore leg 157:157:100:36:29:14:21; of mid leg 157:179:114:43:29:14:21; of hind leg 207:257:129:43:29:14:21; and on hind leg in lateral view, relative widths of femur, tibia, and tarsomeres 1–3, 36:21:14:10:10.

Abdomen: [Removed for examination of genitalia].

Length: Fore basitarsus 0.35 mm; body (without abdomen) (=head+thorax) 1.3 mm.

Male. Unknown.

Distribution. Tasmania.

Holotype, ♀, TASMANIA: Barrow Ck. 8km, NE Nunamara, 12. i.-6. ii. 1983 (Naumann & Cardale) (ZMC).

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